



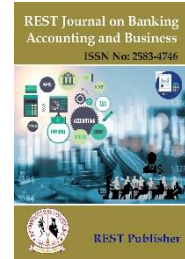
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Optimizing Trade Strategies: The Interactive Trade Decision Making Using Weighted Sum Method

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Abstract: *The interactive nature of trade decision making enables us to navigate the complexities of international commerce with agility and precision. Through the power of technology and data-driven analysis, we can optimize our strategies, adapt to market conditions, and seize opportunities in real-time. Interactive trade decision making involves a dynamic process that integrates various factors such as market trends, economic indicators, risk assessment, and competitive analysis. It empowers traders to actively engage with the market, gather crucial information, and respond swiftly to changing circumstances. By harnessing advanced tools and algorithms, we can analyse vast amounts of data, uncover patterns, and make informed decisions that maximize profitability and minimize risks. This interactive approach transcends traditional models, allowing us to actively participate in trade negotiations, explore different scenarios, and assess the potential outcomes of our decisions. It encourages collaboration and knowledge sharing, enabling us to leverage collective intelligence and gain valuable insights from experts and peers. With real-time market data and interactive platforms at our fingertips, we can simulate, test, and refine our strategies, ensuring that our trade decisions are based on accurate information and thoughtful analysis. The significance of interactive trade decision making in research lies in its ability to revolutionize the way businesses and individuals approach international trade. We will use the Weighted Sum Method (WSM) in this study, which is a research approach that gives weights to various factors and combines them to make conclusions based on their relative relevance in a weighted way. Alternative parameters taken as Policy, Environment, Economy, Ability. Evaluation parameters parameters taken as Local investment, Technology transfer, Local procurement, Cooperate with R&D, Training, International marketing assistance". show the final rank of this paper the Economy is in 2nd rank, the Environment is in 4th rank, the Ability is in 3rd rank, the Policy is in 1st rank, The final result is done by using the WSM method. In conclusion, interactive trade decision making is a powerful approach that leverages technology, real-time market information, and data analysis to enable informed and agile decision making in international trade.*

Keywords: *Local investment, Policy, Environment, Economy, Ability, International marketing assistance.*

1. INTRODUCTION

Industrial Cooperation Programmed (ICP), also known as international interactive commerce, has gained popularity over the past 25 years. A new marketing strategy called offset has emerged in the global market. Offset agreements are flexible and allow for the simultaneous use of multiple contracts. However, many defense businesses and governments are unfamiliar with the concept of offset. Buyer governments and businesses are now seeking offsets as a requirement for expensive military contracts or major commercial transactions, which involve industrial and commercial benefits. Newly industrialized nations (NICs) are utilizing offsets to establish themselves as key players in the global commercial market. Exporters use offsets to identify future business opportunities. Offset agreements are mainly focused on defense-related contracts and can be divided into two categories: Foreign Military Sales (FMS) and Direct Commercial Sales (DCS). The primary parties involved in an offset arrangement are a developed-country defense equipment seller and a foreign government buyer (Palia, 1993). Since 1975, several countries that have acquired significant amounts of equipment have demanded offset agreements to strengthen their industrial sectors. Kremer and Sain (1992) explain that an offset arrangement can be part of a government-to-government agreement or a commercial defense sale.

Liu et al. (2010) suggest that an increase in a distributor's economic satisfaction leads to better transmission of market knowledge, while social satisfaction only improves market information transmission if the distributor already has positive economic satisfaction. Waller (2003) states that the global defense environment has

undergone significant changes since the Cold War and the dissolution of the Warsaw Pact. In this new era of mega-defense suppliers competing for a smaller customer base, offset packages have become increasingly important in global defense procurement competitions. [1] Shared decision-making techniques are often considered superior to both paternalistic and informed choice models of therapeutic decision-making. In paternalistic approaches, healthcare professionals make decisions on behalf of patients, disregarding their autonomy and inhibiting their recognition of personal responsibility. On the other hand, consumerist paradigms advocate for patients making their own decisions based on information provided by healthcare professionals. However, this approach may overlook patients' vulnerability and lack of decision-making skills.

Shared decision-making aims to strike a balance by involving both healthcare professionals and patients in the decision-making process, allowing autonomy and accountability. Nonetheless, there are various interpretations of shared decision-making, each with its own assumptions and implications. Policymakers and healthcare professionals face ethical trade-offs when choosing between these interpretations, but this aspect has received limited attention. Different versions of shared decision-making can be categorized in different ways. This study focuses on narrower and wider notions of shared decision-making, exploring the ethical considerations and conflicts associated with them. The authors argue that existing concepts of shared decision-making are too constrained and that adopting an excessively narrow view may result in undesirable consequences, as it fails to address the ethical balance between paternalistic and consumerist extremes. The intention of this research is not to oppose shared decision-making but rather to scrutinize the assumptions underlying certain limited definitions and highlight the problematic outcomes that arise from these assumptions. While the authors assert that broader conceptions of shared decision-making are more appropriate in principle, they refrain from unequivocally advocating for their implementation in practice. This caution stems from the need for careful specification tailored to healthcare settings and the inherent challenges associated with broader conceptions. [3]

Given the rapid growth of e-commerce, it is crucial for marketers to develop a deep understanding of their customers. This understanding can be achieved by comprehending the decision-making process that potential buyers go through when considering the adoption of e-commerce [4]. With this objective in mind, the purpose of this research is to gain insights into the consumer decision-making process of online shoppers. By doing so, marketers can develop effective marketing strategies and create more impactful websites to achieve their marketing objectives. While marketing research often focuses on specific aspects like strategy, quality, satisfaction, and product design, Lehmann [5] suggests that a broader emphasis based on more comprehensive theories linking various dimensions is necessary. While a narrow focus can contribute to the advancement of academic knowledge, it can be limiting when applied to problem-oriented fields like marketing [6]. Therefore, our study takes a broader framework by considering consumer behavior in a comprehensive manner. We aim to address gaps in consumer decision-making research by examining different stages of the consumer decision process within the context of Singapore's virtual shopping environment. It is important to recognize that factors such as speed, cost, scope, and quality may differ from those in traditional retail stores [5]. Additionally, we aim to collect empirical data to assess the applicability of the Engel, Blackwell, and Miniard (EBM) model [7] in an online setting. The ultimate goal is to investigate customer decision-making and choice behavior prior to making an online purchase. [12]

Trade that is fair FT has been hailed as 'one of the quickest and most promising efforts' amid recent movements towards ethical consumerism (Becchetti & Huybrechts 2008). FT has affected consumers, merchants, and marketing experts alike, while having a very small percentage of global commerce. Importantly, it has begun to affect how mainstream manufacturers function. Not only are retailers like Starbucks eager to showcase their ties to FT, but significant manufacturers like Douwes Egberts and, more controversially, Nestle' have introduced FT-exclusive goods since 2004. The strong desire of large producers and merchants to obtain accreditation from organizations like Fairtrade Labelling Organization International indicates that Fairtrade (FT) labels and symbols hold financial value. In the midst of a crowded grocery store, these logos serve as a crucial shortcut for customers. Without them, it would be difficult for clients to determine if a product was ethically sourced. Due to the complexities of pricing and global supplier networks, the fundamental concepts of fair pay and fair employed conditions, which lie at the core of Fairtrade, may be compromised. Thus, it becomes necessary to highlight that FINE (Fairtrade Labelling Organizations International) has established an accepted definition of Fairtrade.

Fine is a relaxed system consisting of four governments in Europe: Fine, The World Fair Trade Organisation (previously the International Federation of Alternative Trade), the Network of European World Shops, and the European Fair-Trade Association are all part of the World Fair Trade Organisation. These organizations are often comprised of other organizations, reflecting the grassroots nature of the Fairtrade movement and its alignment with the values of ethically conscious consumers [17]. With numerous actors involved, a cohesive and widely accepted perspective on Fairtrade is crucial, and that is where FINE plays a role. FINE describes Fairtrade as a trading partnership that aims to promote greater equity in international commerce through dialogue, transparency, and respect. It works towards long-term development by improving trading conditions and protecting the rights

of marginalized producers and workers, particularly in the Global South. Fair Trade organizations, with the support of consumers, actively assist producers, raise awareness, and advocate for reforms in conventional trade practices and policies. This definition is referenced by Moore (2004), Becchetti & Huybrechts (2008), and other Fairtrade associations such as The Fair-Trade Association of Australia and New Zealand.

While this definition and the values supporting the growth of Fairtrade are commendable, they typically do not delve into the specific decision-making processes of consumers. Instead, the focus of the definition and a significant portion of the literature pertaining to the Fairtrade movement centers around larger-scale, macro-level concerns. These include the establishment of a more equitable framework for international trade and the advancement of a new societal paradigm (Moore et al., 2006). Fairtrade organizations stress the importance of increased regulation, consumer education, and monitoring of suppliers and producers. However, they often overlook the factors that motivate individual customers to purchase Fairtrade products. Some proponents of Fairtrade tend to believe that if consumers are well-informed and aware of the meaning behind the Fairtrade emblem, they would actively seek out ethically produced items and may even be willing to pay a premium for them (although Fairtrade goods are often price competitive). While this may hold true for some individuals, products, and purchase circumstances, it does not apply universally. [19]

By employing interactive tools and data-driven analysis, it offers several notable benefits:

- 1.Enhanced decision-making: Interactive trade decision making allows for real-time access to market data, enabling more informed and accurate decision-making. Traders can quickly evaluate market trends, assess risks, and identify opportunities, leading to improved outcomes.
- 2.Adaptability to market changes: The interactive approach enables traders to respond swiftly to dynamic market conditions. They can monitor fluctuations, adjust strategies in real-time, and explore alternative trade routes or markets as circumstances evolve, ensuring business continuity and resilience.
- 3.Minimized risks: Interactive trade decision making incorporates risk assessment tools, helping traders identify and mitigate potential risks associated with trade transactions. By analysing various scenarios and considering risk factors, businesses can make proactive decisions that protect their interests and assets.
- 4.Increased profitability: By leveraging interactive trade decision-making tools, traders can optimize their strategies and maximize profitability. Real-time analysis, trend identification, and performance monitoring contribute to improved trade outcomes, reduced costs, and enhanced revenue generation.
- 5.Improved collaboration: Interactive trade decision making facilitates collaboration among stakeholders, including experts, peers, and business partners. By sharing knowledge, insights, and experiences, participants can collectively enhance their decision-making processes, ultimately fostering innovation and growth.

2. MATERIALS AND METHODS

Making multicriteria decisions is a crucial aspect of engineering design. There are several methodologies, both informal and formal, that may be used to assist such design decisions, such as quality function deployment and the analytic hierarchy process. Several fundamental characteristics are shared by these design decision techniques. To pick among designs, all rely on the aggregate of numerous criteria or measures of performance, and most approaches allow for the assigning of priority to particular features through the application of weights. When two or more traits must be traded off against each other, these relevance weights are meant to allow for meaningful comparison of multiple possibilities. The most commonly used strategy for decision-making is the weighted-sum aggregation of preferences, where the relevant weights are directly declared. Previous discussions on the optimization problems of the weighted-sum formulation have primarily focused on recovering the entire Pareto frontier by adjusting the parameters of the objective function. However, in this study, the emphasis is on the decision-making task of selecting parameters to achieve a desired outcome, rather than recovering the entire Pareto frontier. The choice parameters are considered to define both the relative importance of different qualities and the extent to which compensation can occur between them. Compensation, in this context, is a quality related to decision-making rather than design, as it refers to the willingness to allow excellent performance on one attribute to compensate for poor performance on another. [10]

Emerging Advancements in Multi-Criteria Regulatory Evaluation: As a result of agricultural and non-agricultural policies, agricultural and agri-food enterprises are influenced by a range of laws and prescriptions. Policy is typically made by many entities representing various geographical levels [municipality, province, region, country, European Union (EU), international]. Many stakeholders, including consumers, farmers, food merchants, and food processors, are affected and impacted by the result producer's actions. Furthermore, the DM's actions (or inactions) impact democracy, ethics, transparency, and accountability.

The DM's behaviors are difficult to predict and estimate due to the complexity of human relationships, the unclear background, and value conflicts (Munda, 2004). As highlighted by Gibbons and Georgiou (1987) and Georgiou

and Rosner (2000), the need for policy evaluations by community administrations has expanded dramatically in recent years, mostly to improve the quality of policy formulation and execution. Indeed, the relevance of public policy evaluation has expanded dramatically in the last 20 years, and it is now rather normal to have ex ante or ex post assessment exercises connected to policy-making procedures, carried out by either community institutes, advisors, or experts. [23]

Interactive trade decision making is a multifaceted process that combines technology, data analysis, and real-time market information to enable businesses and individuals to make informed and agile decisions in the realm of international trade. It encompasses a range of tools, methodologies, and approaches that empower traders to actively engage with the market, adapt to changing conditions, and optimize their strategies for maximum profitability and risk mitigation. Interactive trade decision making relies on advanced technologies like artificial intelligence (AI), machine learning, and big data analytics to process vast amounts of data and provide valuable insights. These cutting-edge tools enable the analysis of extensive datasets, enabling actionable conclusions to be drawn. These technologies enable traders to gather real-time market data, monitor trends, assess risks, and evaluate potential opportunities across global markets. By analyzing historical and current data, traders can identify patterns, correlations, and emerging market dynamics that inform their decision-making processes.

One of the key benefits of interactive trade decision making is its ability to provide traders with a comprehensive understanding of market conditions. Through interactive platforms and tools, traders can access a wealth of information on market prices, currency fluctuations, supply and demand dynamics, regulatory changes, and geopolitical events. This real-time access to information allows traders to make timely decisions, respond to market changes, and capitalize on emerging opportunities.

Interactive trade decision-making platforms often provide traders with simulation and modeling capabilities. These features allow traders to simulate various scenarios and assess the potential outcomes of their decisions before executing actual trades. By experimenting with different strategies, traders can evaluate the impact of their decisions on profitability, risk exposure, and market position. This iterative process of simulation and refinement enables traders to optimize their strategies and make more informed choices.

Risk management is a crucial aspect of interactive trade decision making. Traders can utilize risk assessment tools and algorithms to evaluate the potential risks associated with specific trade transactions or market conditions. These tools consider factors such as market volatility, credit risk, counterparty risk, and regulatory compliance to provide traders with a comprehensive risk profile. Armed with this information, traders can implement risk mitigation strategies, such as diversifying their portfolios, hedging positions, or adjusting trade volumes. Collaboration and knowledge sharing play a significant role in interactive trade decision making. Traders can connect with experts, peers, and industry professionals through online platforms, forums, and communities. These interactions foster the exchange of insights, experiences, and best practices, allowing traders to tap into collective intelligence. By learning from others and incorporating diverse perspectives, traders can make more well-rounded and informed decisions.

Interactive trade decision making also enables traders to explore new markets, trade routes, and product opportunities. Through market research, data analysis, and simulation, traders can assess the feasibility and potential profitability of entering new markets or industries. By diversifying their trade activities, traders can spread risks, tap into emerging sectors, and seize growth opportunities. Furthermore, interactive trade decision making has implications for policymakers and regulatory bodies. Researchers and policymakers can utilize interactive models to evaluate the potential impact of trade policies, agreements, and regulations on various stakeholders and industries. These models allow policymakers to make evidence-based decisions and assess the economic consequences of different policy scenarios. In summary, interactive trade decision making revolutionizes the way trader's approach international trade by leveraging technology, data analysis, and real-time market information. It enhances decision-making processes, minimizes risks, fosters collaboration, and expands market opportunities. By embracing interactive tools and methodologies, traders can navigate the complexities of global trade with agility, adaptability, and intelligence.

Policy: The term "Policy related to interactive trade decision making" refers to the regulations, guidelines, and frameworks established by governments and international organizations to govern and facilitate the use of interactive trade decision-making tools and technologies. These policies aim to ensure transparency, fairness, and efficiency in trade transactions while harnessing the benefits of interactive trade decision making.

Environment: The term "environment related to interactive trade decision making" refers to the broader ecological and sustainability considerations that impact trade decisions made through interactive processes. It recognizes the interconnectedness between trade activities, economic development, and environmental preservation. Incorporating environmental factors into interactive trade decision making helps promote sustainable practices, minimize negative environmental impacts, and ensure long-term ecological balance.

Economy: The term "economy related to interactive trade decision making" refers to the interplay between interactive trade decision making and the broader economic landscape. It encompasses the various economic

factors and considerations that influence trade decisions made through interactive processes, including market trends, economic indicators, fiscal policies, and trade agreements.

Local Investment: The term "local investment related to interactive trade decision making" refers to the allocation of financial resources by businesses or individuals in their local economies based on informed trade decisions made through interactive processes. It involves the assessment of potential investment opportunities within the domestic market and the strategic deployment of capital to support local industries, businesses, and communities.

Cooperate with R&D: The term "Cooperate with R&D related to interactive trade decision making" refers to the collaboration between businesses or individuals engaged in interactive trade decision making and research and development (R&D) institutions or teams. This collaboration aims to leverage R&D expertise to enhance the effectiveness and efficiency of interactive trade decision-making processes.

International Marketing Assistance: The term "international marketing assistance related to interactive trade decision making" refers to the support, guidance, and resources provided to businesses or individuals engaged in interactive trade decision making to enhance their international marketing efforts. It involves accessing specialized knowledge, tools, and services aimed at facilitating successful market entry, expansion, and promotion in foreign markets.

Technology Transfer: The term "technology transfer related to interactive trade decision making" refers to the process of sharing and disseminating technology, knowledge, and expertise between different entities engaged in interactive trade decision making. It involves the transfer of technological innovations, tools, methodologies, and best practices to enhance the efficiency, effectiveness, and competitiveness of trade decision-making processes.

3. RESULTS AND DISCUSSIONS

TABLE 1. The interactive trade decision-making

	Local procurement	Cooperate with R&D	Training	International marketing assistance	Local investment	Technology transfer
Policy	0.37	0.495	0.151	0.23	0.302	0.461
Environment	0.271	0.076	0.143	0.109	0.286	0.219
Economy	0.251	0.2	0.127	0.089	0.254	0.178
Ability	0.108	0.229	0.079	0.071	0.157	0.143

Table 1 shows the interactive trade decision making using the Analysis method in WSM Alternative: Local procurement, Cooperate with R&D, Training, International marketing assistance, Local investment, Technology transfer. Evaluation preference: Policy, Environment, Economy, Ability

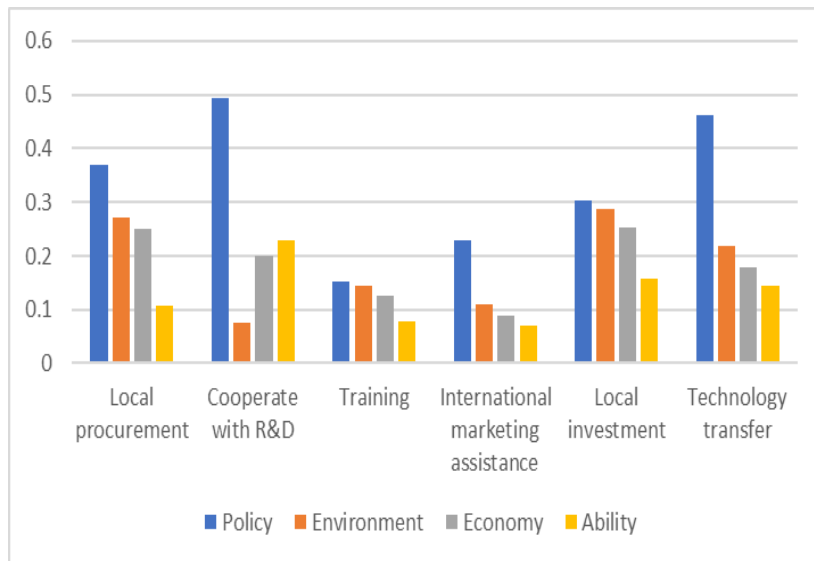


FIGURE 1. The interactive trade decision-making

Figure 1 shows the interactive trade decision making using the Analysis method in WSM. This figure shows the policy, environment, economy, Ability as evaluation parameters. And it shows the local procurement, cooperate training, international marketing assistance, local investments, technology transfer as alternative parameter with the difference of graph patterns.

TABLE 2. Normalized Data

1	1	1	1	0.51986755	0.310195228
0.732432432	0.153535354	0.94702	0.473913043	0.548951049	0.652968037
0.678378378	0.404040404	0.84106	0.386956522	0.618110236	0.803370787
0.291891892	0.462626263	0.52318	0.308695652	1	1

Table 2 shows the interactive trade decision making using the Analysis method in WSM Alternative: Local procurement, Cooperate with R&D, Training, International marketing assistance, Local investment, Technology transfer. Evaluation preference: Policy, Environment, Economy, Ability

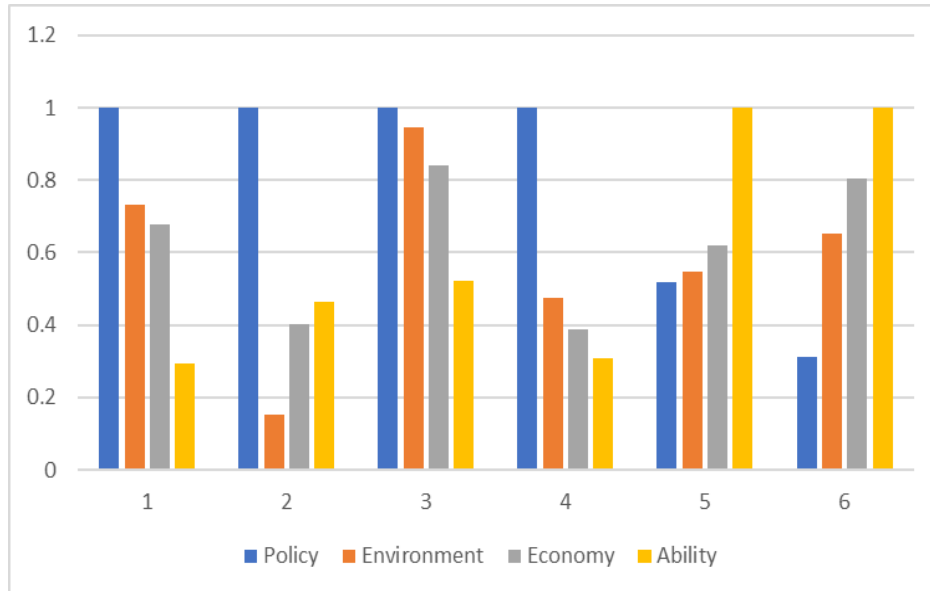


FIGURE 2. Normalized Data

Figure 2 shows the Normalized data for Alternative: Policy, Environment, Economy, Ability. Evaluation preference: Local investment, Technology transfer, Local procurement, Cooperate with R&D, Training, International marketing assistance it is also the Maximum in Normalized value.

TABLE 3. Weightages

0.16666667	0.16666667	0.16666667	0.16666667	0.16666667	0.16666667
0.16666667	0.16666667	0.16666667	0.16666667	0.16666667	0.16666667
0.16666667	0.16666667	0.16666667	0.16666667	0.16666667	0.16666667
0.16666667	0.16666667	0.16666667	0.16666667	0.16666667	0.16666667

Table 3 presents the weightages utilized for the analysis, where equal weights are assigned to all parameters for the analysis.

TABLE 4. Weighted normalized decision matrix

0.16666667	0.16666667	0.16667	0.16666667	0.086644592	0.051699205
0.122072072	0.025589226	0.15784	0.078985507	0.091491841	0.108828006
0.113063063	0.067340067	0.14018	0.064492754	0.103018373	0.133895131
0.048648649	0.077104377	0.0872	0.051449275	0.16666667	0.16666667

Table 4 shows the weighted normalized decision matrix for the interactive trade decision making using the Analysis method in WSM Alternative: Local procurement, Cooperate with R&D, Training, International marketing assistance, Local investment, Technology transfer. Evaluation preference: Policy, Environment, Economy, Ability.

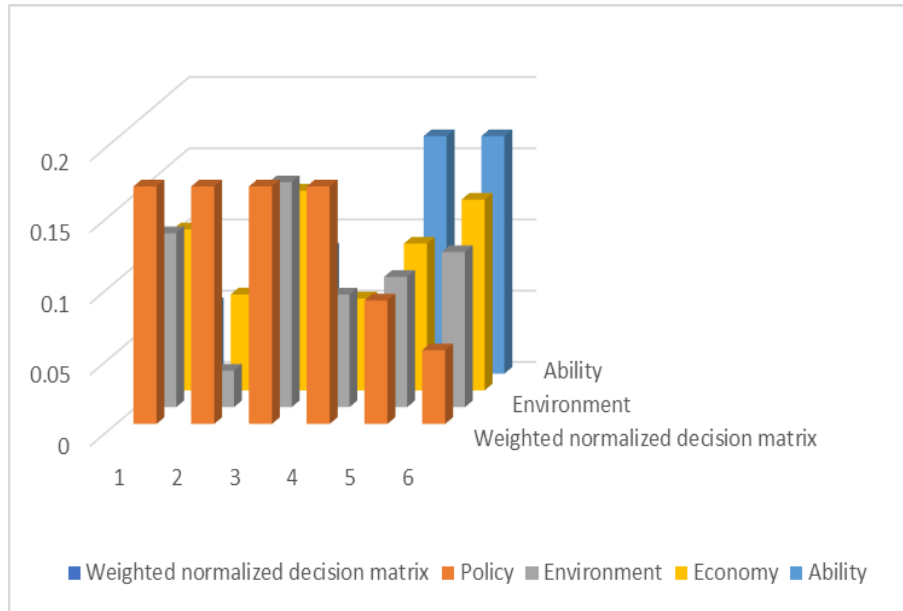


FIGURE 3. Weighted Normalized Decision matrix

Figure 3 shows the Normalized data for Alternative: Policy, Environment, Economy, Ability. Evaluation preference: Local investment, Technology transmission, Local procurement, Cooperate with R&D, Training, International marketing assistance it is also the Maximum in Normalized value.

TABLE 5. Preference Score & Rank

	Preference Score	Rank
Policy	0.805010463	1
Environment	0.584803297	4
Economy	0.621985988	2
Ability	0.597732102	3

Table 5 shows the final rank of this paper the Economy is in 2nd rank, the Environment is in 4th rank, the Ability is in 3rd rank, the Policy is in 1st rank, The final result is done by using the WSM method.

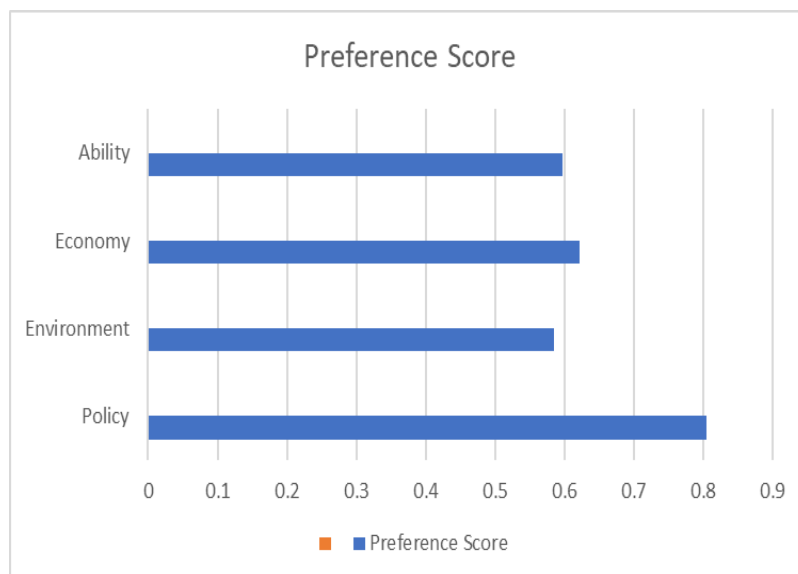


FIGURE 4. Preference Score

Figure 4 shows the interactive trade decision making using the Analysis method in WSM having the preference scores for the Alternative: Policy, Environment, Economy, Ability

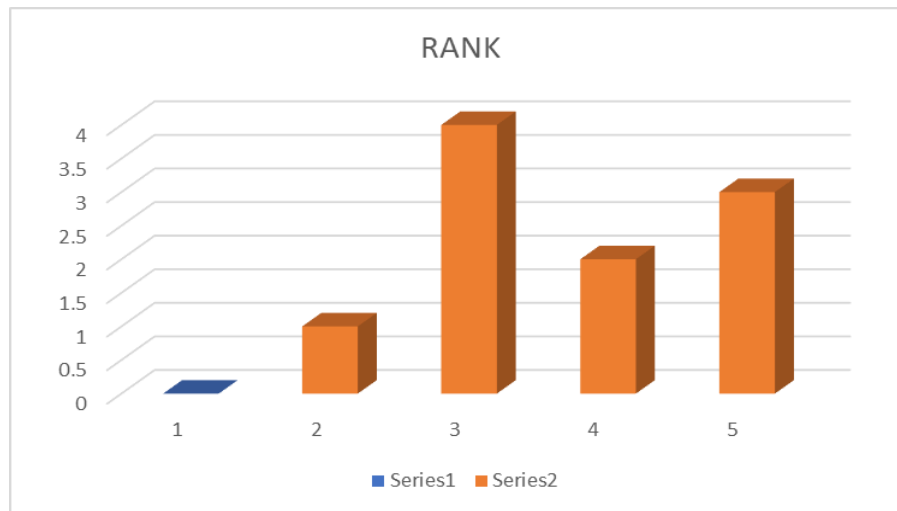


FIGURE 5. Rank

Figure 5. shows the final rank of this paper the Economy is in 2nd rank, the Environment is in 4th rank, the Ability is in 3rd rank, the Policy is in 1st rank, The final result is done by using the WSM method.

4. CONCLUSIONS

In conclusion, interactive trade decision making is a powerful approach that leverages technology, real-time market information, and data analysis to enable informed and agile decision making in international trade. By actively engaging with the market and utilizing interactive platforms and tools, traders can adapt to changing conditions, optimize strategies, and make well-informed decisions. One commonly used method in interactive trade decision making is the weighted sum method. This method allows traders to systematically evaluate alternatives by assigning weights to decision criteria and calculating an overall score for each alternative. By considering multiple criteria and their relative importance, the weighted sum method facilitates a quantitative and comprehensive assessment of trade decisions. The combination of interactive trade decision making and the weighted sum method brings numerous benefits. It enhances decision-making accuracy, transparency, and efficiency. Traders can prioritize criteria based on their specific objectives, effectively evaluate alternatives, and identify optimal trade strategies. The systematic nature of the weighted sum method helps traders navigate complex decision landscapes and make informed choices. Furthermore, the interactive trade decision-making process and the weighted sum method contribute to risk management and strategy optimization. Traders can simulate scenarios, assess potential outcomes, and identify potential risks before executing trades. This proactive approach allows for risk mitigation and the exploration of new market opportunities. Overall, interactive trade decision making and the weighted sum method empower traders to make data-driven decisions, adapt to dynamic market conditions, and optimize their trade activities. By embracing these approaches, businesses can improve their competitiveness, maximize profitability, and navigate the complexities of international trade with greater confidence.

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